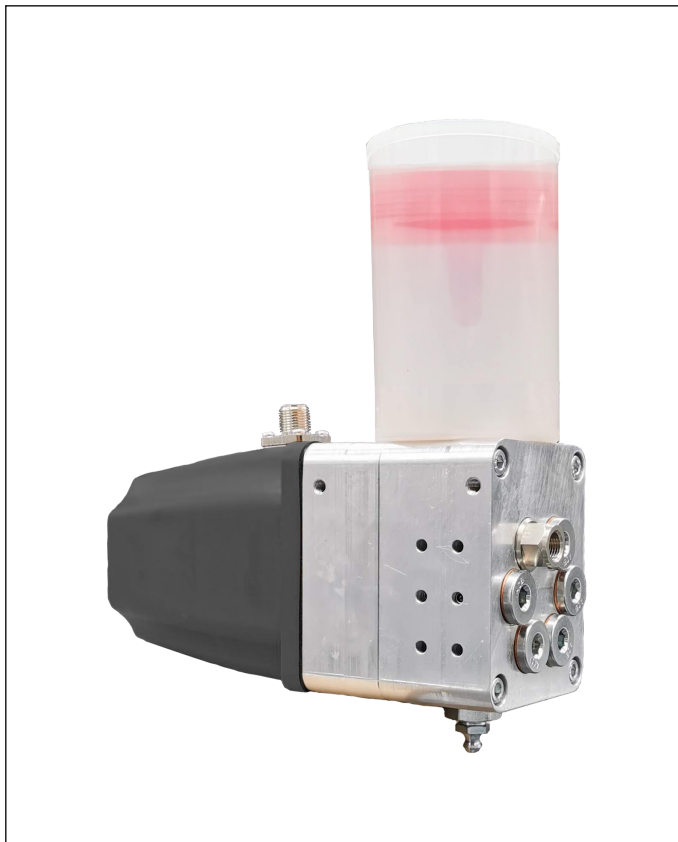


Technical Data Sheet

DLS-47X
DLS-47x-2C





**Pump unit:
DLS-47X // DLS-47x-2C**

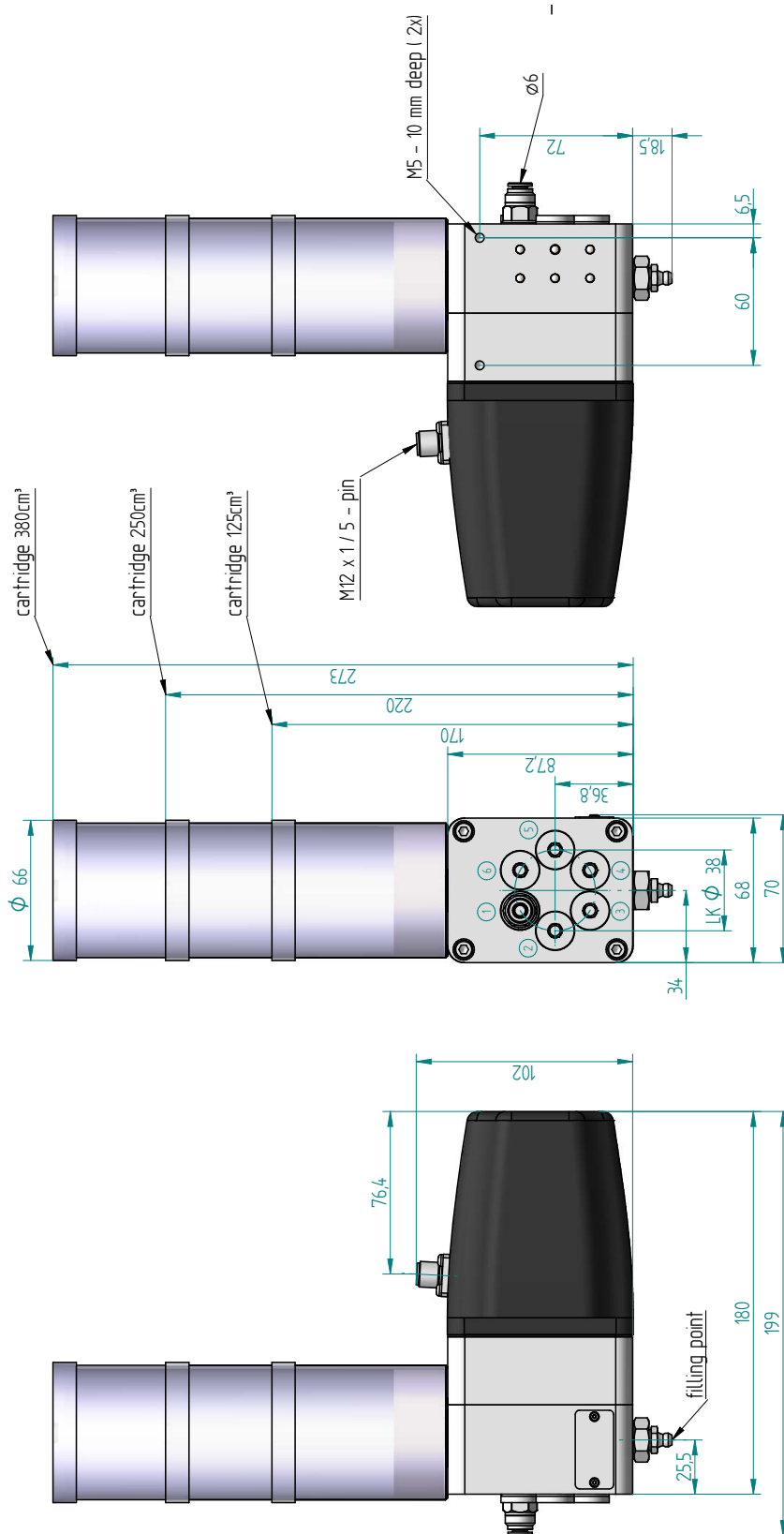
- + Compact dosing pump
- + up to 6 outlets
- + Outlets can be subsequently closed
- + Reservoir can be filled with grease nipple
- + Function monitoring as standard
- + Level monitoring as standard
- + Reservoir cartridge control as standard
- + Low current consumption

**Available in S2C version with
intelligent control:**

- + Dual-cycle lubrication
- + Overpressure shut-off
- + Level prewarning
- + Temperature monitoring

Technical specifications:

discharge pressure:	max. 70 bar
Rotational speed:	ca. 6 min ⁻¹
delivery volume	
per outlet and minute:	0,24 cm ³ / min
Medium:	Grease NLGI-class 000 ... 2 Oil from an operating viscosity of 150 mm ² /s
Ambient temperature:	+10 ... +80 °C
Material of outer parts:	Galvanized steel aluminum plastic
seals:	NBR / FPM / HNBR
Weight without container:	ca. 1,5 kg
Installation position:	vertical (other installation positions on request)
Degree of protection:	DIN EN 60529 IP44
Power supply:	24 VDC
max. power consumption:	0,5 A
Connector:	M12x1, 5-pin



Note on the outlets:

The pump is delivered with 6 open outlet bores. These can be completed with nonreturn valve cartridges to form a fully functional outlet, or they can be closed using the screw plugs supplied.

If not all outlets are required, up to 5 outlets can be deactivated. For this purpose, the outlets must be closed. A fully functional outlet can subsequently be made from a closed outlet by exchanging the screw plug for a non-return valve cartridge. The outlet is subsequently closed by unscrewing the non-return valve cartridge from the pump body and then closing the outlet using a G 1/4 screw plug with sealing ring.

The lubricant from a closed outlet is pumped back into the suction line.

Electrical data:

Motor:
voltage: 24 VDC
power consumption: max. 0,5 A

level control by cartridge 380, 250, 125 (Minimum):

voltage: 10 ... 30 VUC
switching current: max. 0,25 A
switching capacity: max. 5 W/VA
switching function: NC contact

functional check:

voltage: 10 ... 30 VUC
switching current: max. 0,5 A
switching capacity: max. 10 W/VA
switching function: NO contact
1 signal per revolution

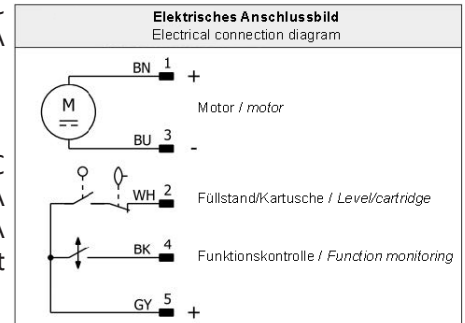
cartridge control button:

voltage: 0,1 ... 50 VUC
switching current: max. 0,2 A
switching function: NO contact

connection type:

Electrical connection of the pump:

pin M12x1, 5-pin



Note on the connection diagram:

The connection diagram is only valid for the container variants 380, 250 and 125. The level control of the cartridges Lube-Shuttel, DIN 1284 and System Reiner are connected separately (see technical data of the respective container variant).

Function description:

The rotational movement of an electric motor 1 is converted via a swash plate 2 into a lifting movement of the delivery pistons 3 and 4. In the suction position (piston 4) the medium is drawn in from the cartridge 5, in the pressure position (piston 3) the medium is pumped towards the outlet. At flow the medium flows through the integrated non-return valve 6 to the outlet. The lubricant is discharged in the numbered sequence (see illustration). Lubricant lines can be connected to plug connection 7. An empty cartridge 5 can be refilled via the grease nipple 8.

Outlets:

Any number of non-return valve cartridges 6 or screw plugs 9 can be retrofitted to outlets. If a screw plug is used, the lubricant is pumped back into the suction line.

Function monitoring:

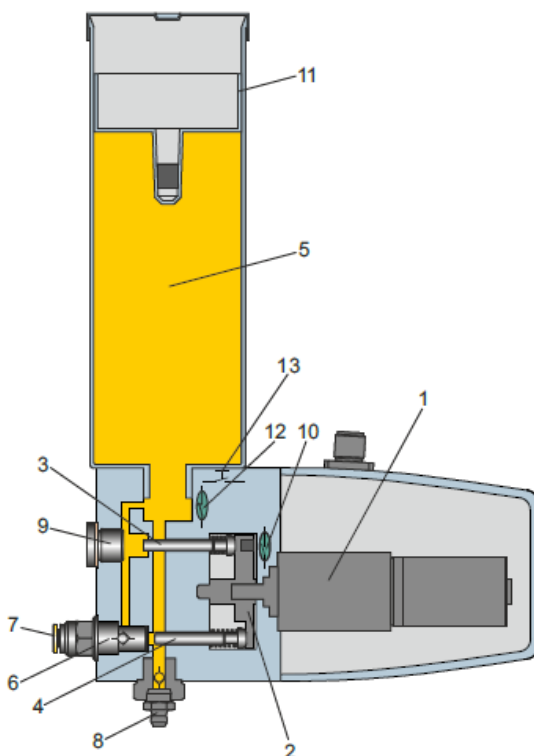
The rotational movement of swash plate 2 is detected by a monitoring element 10. A signal is emitted at each rotation.

Level monitoring:

A further monitoring element 12 detects the follower piston or float 11 when the cartridge 5 is empty and outputs a corresponding signal.

Cartridge control:

A pushbutton 13 integrated in the pump body serves as a control whether the cartridge is fully screwed in.



Version Smart 2 Cycle

- + Dual-cycle lubrication
- + Overpressure shut-off
- + Level prewarning (Depending on reservoir)
- + Temperature monitoring

The Smart 2 Cycle (S2C) version is equipped with an intelligent control system.

With this control system, the lubricant supply of two separate lubrication cycles is possible independently of each other. Depending on the control signal of the pump (see table), either lubrication cycle 1 or lubrication cycle 2 is activated. By using a dual-cycle system, variable quantity ratios, even with large differences, can be provided at the lubrication points without having to connect the outlets externally. Changing the lubrication quantity for the respective lubrication cycles is also very easy to do at a later

time. The pump has an integrated overpressure shut-off. This prevents the maximum permissible operating pressure being harmfully exceeded.

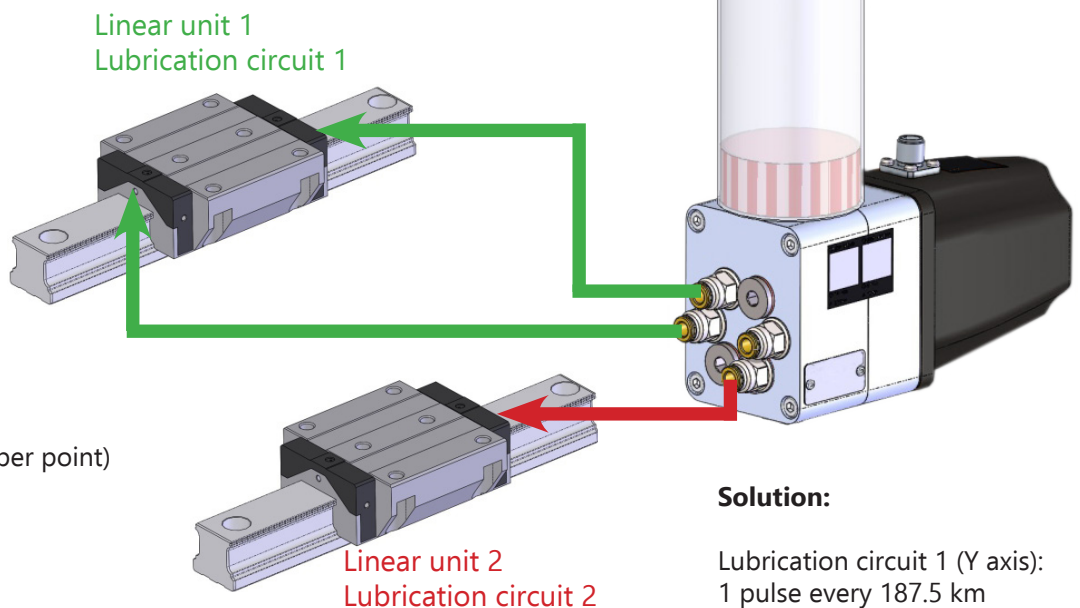
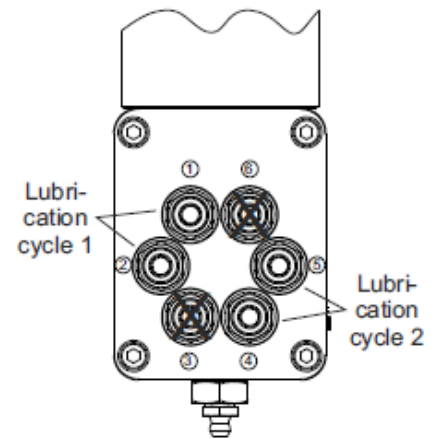
The pump is equipped with a temperature monitoring system that prevents it from being used outside the permissible operating temperature range.

Note:

Outlets 1 and / or 2 can be used for lubrication cycle 1.
Outlets 4 and / or 5 can be used for lubrication cycle 2.

When actuated with a continuous signal, the pump operates as in the standard version, but still has overpressure and temperature monitoring. All 6 outlets can be used and the pump provides a function monitoring signal for each rotation (see page 2 "Function monitoring").

For the use of the dual-cycle lubrication the outlets 3 and 6 have to be deactivated!



Example:

Linear unit 1 (Y axis):
2 lubrication points
40 mm³ / 187.5 km (per point)

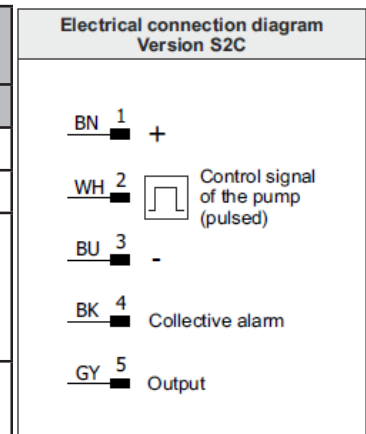
Linear unit 2 (X-axis):
1 lubrication point
40 mm³ / 107.5 km

Solution:

Lubrication circuit 1 (Y axis):
1 pulse every 187.5 km

Lubrication circuit 2 (X axis):
1 pulse every 107.5 km

Control signal at pin 2 during operation (no alarm → pin 4 = 1 or pulse 1 Hz)	
Signal length	Function
300 ... 700 ms *	Conveying lubrication cycle 1 (Operating mode S2C)
800 ... 1200 ms *	Conveying lubrication cycle 2 (Operating mode S2C)
> 1500 ms	Conveying at all outlets, as long as the input signal is present. If the input signal is removed, the current conveying process is completed. (Operating mode Standard)
*: Number of input signals corresponds to the number of doses at the respective lubrication cycle	



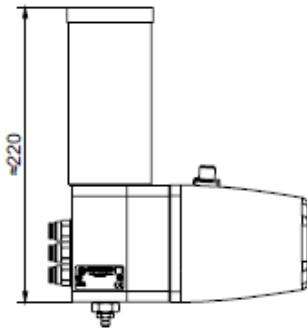
Output at pin 5	
Signal length	Description
500 ms	Conveying lubrication cycle 1 occurs (Operating mode S2C)
1000 ms	Conveying lubrication cycle 2 occurs (Operating mode S2C)
1000 ms	Conveying at all outlets occurs (Operating mode Standard)

Alarm signal at pin 4	
Signal	Description
1 (continuous)	no alarm
Puls 1 Hz	Level prewarning ¹⁾
0 (continuous)	Alarm → see error signal at pin 5 In the event of a pending alarm, conveying is interrupted at the outlets. After the error has been corrected, the alarm can be acknowledged via a falling edge at pin. The alarm output is reset and the pump performs a reference run.

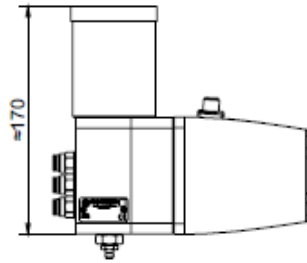
Error signal at pin 5 with frequency 1 Hz (alarm → pin 4 = 0)		
Error	Number of signals per 30 s	Description
Level ¹⁾	1	Min switching point reached
Cartridge monitoring	2	Cartridge control is not actuated
Function	3	Function monitoring not carried out within the necessary time
Maximum pressure	4	Maximum pressure of 80 bar exceeded on at least one outlet
Operating temperature	5	Pump outside the permissible operating temperature
Other errors	6	Internal error, unit defective

¹⁾ not with Lube-Shuttle, System Reiner and DIN1284 cartridges

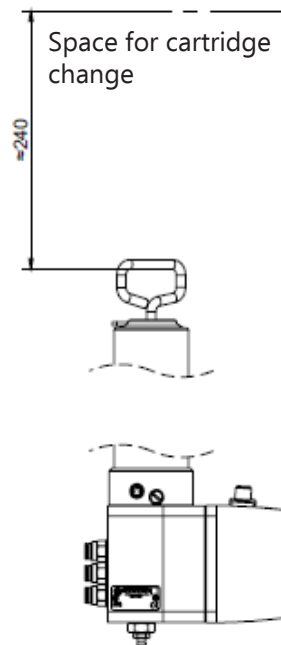
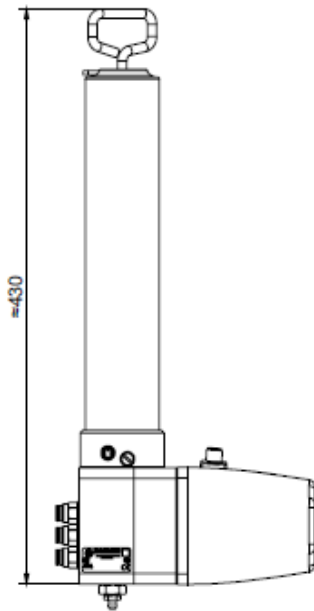
Container 250



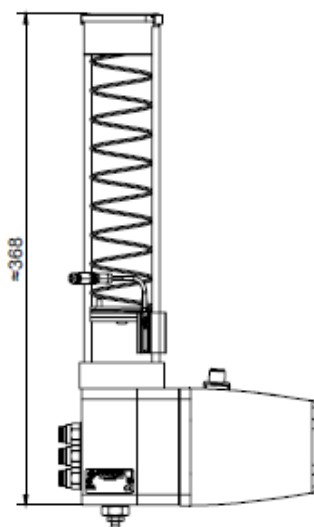
Container 125



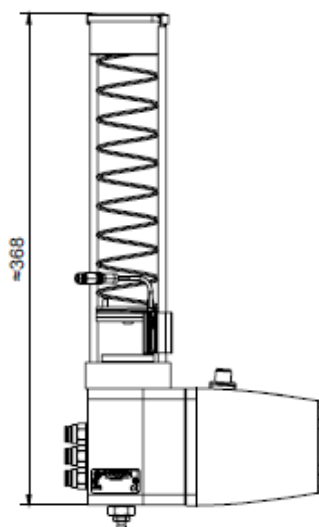
Container DIN 1284



Container Lube-Shuttle



Container System Reiner



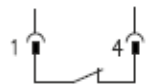
Container 380, 250, 125:

Weight: ca. 0,1 kg
 Installation position: Grease: any
 Oil: preferably vertical

for cartridges 400 g DIN 1284

Medium: Grease NLGI-Class 0... 2
 other NLGI classes on request
 Material: St and Al
 Seals: NBR / FPM
 Weight without cartridge: ca. 0,9 kg
 Installation position: any
 level control:
 voltage: 10 ... 30 VUC
 switching current: max. 250 mA
 connection type: pin M8x1, 3-polig
 Degree of protection: DIN EN
 60529 IP67
 switching function: normally closed
 at min

connection diagram:



Holder for cartridges 400 g System Lube Shuttle
Holder for cartridges 500 g System Reiner

(the follower piston must stand back at least 25 mm from the edge of the cartridge)

Medium: Grease NLGI-Class 0 ... 2
 other NLGI classes on request
 Material: St, Al and PA
 Seals: FPM
 Weight without cartridge: ca. 0,5 kg

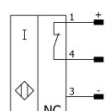
Installation position: depending on cartridge design & lubricant, else any
 for cartridges: 400 oder 500 g

Cartridges are not included!

level control:

voltage: 10 ... 30 VUC
 switching current: max. 0,1 A
 Degree of protection: DIN EN
 60529 IP67
 connection type: wire with pin
 M8x1, 3-polig
 switching function: normally closed
 at min

connection diagram:



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